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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,023	09/10/1999	BELISARIO DAVILA ALANIS	041-468-L	3630
27201	7590	09/23/2004	EXAMINER	
UNISYS CORPORATION			KISS, ERIC B	
OFFICE OF GENERAL COUNSEL			ART UNIT	PAPER NUMBER
10850 VIA FRONTERA			2122	
M/S 1000				
SAN DIEGO, CA 92127			DATE MAILED: 09/23/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/394,023	ALANIS, BELISARIO DAVILA	
	Examiner	Art Unit	
	Eric B. Kiss	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 May 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,4,8,12,14,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,4,8,12,14,16 and 17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 May 2004 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. The reply filed 26 May 2004 has been received and entered. Claims 1, 4, 8, 12, 14, 16, and 17 are pending.

Oath/Declaration

2. The substitute Declaration filed 28 May 2004 has been received and entered. The previous objection to the Declaration, as detailed in the previous Office action, is withdrawn in view of Applicant's submission of a compliant substitute Declaration.

Response to Amendment

3. The amendment filed 26 May 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. §132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- a) Applicant has changed “one-dimensional array” to “singly two-dimensional array” on page 30, in line 34 of the specification.
- b) Applicant has indicated an intent to change “USE ONE-DIMENSIONAL ARRAY” to “USE FIRST TWO-DIMENSIONAL ARRAY” in the boxes labeled “(vm1)” and

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“ivg3) in Figures 7C and 7D, respectively. Applicant’s drawing corrections do not comply with 37 CFR §1.121(d). However, the Examiner notes that such changes to Figures 7C and 7D, if submitted in compliant drawing corrections, would be formally objected to as introducing new matter into the disclosure.

It is noted that Applicant has attempted to indicate support for these amendments in the originally filed specification (see Applicant’s arguments on p. 32, in paragraphs 2-3). However, the sections relied upon from page 6, lines 5 and 19-20 appear to only provide support for dual two-dimensional arrays. Further, although Applicant has stated,

Then, at page 6 line 25, it was seen in the original specification --- a selection is made as to use of a **single two-dimensional array** or a dual two-dimensional array for buffer loading [emphasis added by the Examiner],

the cited section of the original specification actually states,

a selection is made as to the use of a **single dimensional array** or a dual two-dimensional array for buffer loading [emphasis added by the Examiner].

It is further noted that Applicant’s originally filed claims, while reciting “...choosing single or dual two-dimensional array means...” (see, for example, originally filed claim 1), do not sufficiently justify the addition of the new matter discussed above because the disclosure in the claim is not sufficiently specific and detailed to support the necessary amendment of the drawing and description (see MPEP §608.01(l)).

Applicant is required to cancel the new matter in the reply to this Office Action.

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4. Applicant's amendments to the drawings are not in compliance with 37 CFR §1.121(d).

Accordingly, the objections to the drawings, as detailed in the previous Office action, are maintained and reproduced below.

5. Applicant's amendments to the specification appropriately address the objections to the specification as detailed in the previous Office action. Accordingly, these objections are withdrawn in view of Applicant's amendments.

6. Applicant's amendments to the claims appropriately address the objections to the claims as detailed in the previous Office action. Accordingly, these objections are withdrawn in view of Applicant's amendments.

Admitted Prior Art

7. The following statements are taken to be admitted prior art:

It is well-known in the computer art that a Central Processing Unit can assess the number of bytes to be downloaded and count them in order to allow the branch point to decide whether a single two-dimensional array will do, or if a dual two-dimensional array is needed [see Applicant's remarks on p. 29].

The Central Processing Unit is commonly known to be able to count the number of bytes to be downloaded and from this, to select the appropriate number of buffer arrays needed to accommodate the number of bytes involved. These type of operations are already well-known in the state of the art [see Applicant's remarks on p. 29].

Response to Arguments

8. Applicant's admission of prior art (see above) appropriately addresses the rejection of claims 1, 4, 12, and 14, under 35 U.S.C. §112, first paragraph, based on the enablement requirement.

Applicant's Appendix I appears to suggest that Applicant's claimed invention was reduced to practice and embodied in a product or service available to the public more than one year prior to the filing date of the instant application. Applicant is formally required to clarify the exact nature and extent of any public use or sale as set forth below in the Requirement for Information under 37 CFR §1.105 and a rejection of all pending claims under 35 U.S.C. §102(b). Applicant is in the best position to address this newly raised issue with an appropriate response.

Requirement for Information - 37 CFR § 1.105

9. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the Examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter.

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10. In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in Applicant's disclosure.

11. The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the Applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

12. The Applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the Applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

13. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Drawings

14. Figures 1A, 1B, 1C, 1D, 2, 3, 4, and 5, should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

15. The drawings are objected to because Fig. 6 illustrates a two-dimensional array inconsistent with the disclosure on pp. 24-25. Specifically, the Examiner believes that two typographical errors appear in Fig. 6:

- a) the n^{th} column of the array should presumably be labeled --8191-- instead of "8192". That is, 8,193 columns are illustrated (counting column 0) instead of the disclosed 8,192 columns
- b) the descriptive label "ARRAY BUFFER [0:47, 0:8192]" in Fig. 6 should presumably read --ARRAY BUFFER [0:47, 0:8191]-- (see the discussion above).

16. The drawings are objected to because reference "A" (upper-left corner) in Fig. 7c should apparently read --I--.

Claim Rejections - 35 USC § 112

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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18. Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 16, limitations (d), (g), (i), and (j) each end with an open-ended limitation related to a parenthetical “(YES)”. It is unclear whether the “YES” in all of these phrases is intended to refer to the parenthetical assignments of “YES” and “NO” in limitation (d) or to the individual deciding, determining, and comparing steps recited in limitations (d), (g), (i), and (j). It is unclear what role the parenthetical labels “(YES)” and “(NO)” play in defining the scope of the claims. Further, as a semicolon follows each “...(YES)...” limitation, it is unclear which, if any, subsequent steps are to be performed in response to a “YES”. Further, since limitation (g) describes determining **that** said controller has been assigned for utilization, the remaining portion of limitation (g) appears to be redundant.

As per claim 17, the phrase “wherein said step (d) decision is NO” renders the claim indefinite because “NO” is not a valid method step. In the interest of compact prosecution, this limitation is interpreted as “wherein the result of said deciding in step (d) is deciding not to download said firmware file to said peripheral controller”. However, based on the discussion of claim 16 above, it is unclear from the subsequent recitation of “and if ... YES” in limitation (d) of claim 16 whether any of steps (e) through (r) are cancelled by such a decision in limitation (d). Additionally, claim 17 suffers similar problems to claim 16 in that the phrase “if ... YES ...then” is recited in each of limitations (dn1), (dn5), (dn7), and (dn9). It is unclear whether the “YES” in all of these phrases is intended to refer to the parenthetical assignments of “YES” and “NO” in limitation (d) of parent claim 16 or to the individual deciding, comparing, inquiring, and

checking steps recited in limitations (dn1), (dn5), (dn7), and (dn9). Further, as a semicolon follows each “... (YES)...” limitation, it is unclear which, if any, subsequent steps are to be performed in response to a “YES”.

19. In view of the problems found in claims 16 and 17, as discussed above, the Examiner can form no meaningful interpretation or opinion of patentability, in view of prior art, for claims 16 and 17 in their present form. Lack of a rejection based on prior art for these claims should not be construed as an indication of impending allowability of these claims. Applicant is strongly encouraged to substantially amend claims 16 and 17 to define each deciding, comparing, inquiring, and checking step in more formal language, making it clear which subsequent steps are performed (or specifically not performed) in response. Applicant’s use of ambiguous labels “(YES)” and “(NO)” continues to render the scope and meaning of these claims unascertainable.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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21. Claims 1, 4, 8, 12, 14, 16, and 17 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Such is suggested by Applicant's submission and discussion of Appendix I, which is reproduced as an attachment to this Office action.

Regarding Appendix I, Applicant has stated,

Also attached in Appendix I is a cover sheet and certain designated coding of a 1994 DFAST software patch utilized by Applicant's employer, Unisys Corporation, which patch was in common use by software engineers to utilize branch points which can select one path of operations or another path of operations at a given branch point [see Applicant's remarks on p. 28, in the second-to-last paragraph].

Additionally, the attached Appendix I will indicate portions of the DFAST program in 1994 which will illustrate engineering usage of the selection of first, and first and second buffer arrays [see Applicant's remarks on p. 28, in the last paragraph, continuing onto p. 29].

Additionally, the source code documentation in Appendix I suggests that the DFAST utility was used to load microcode to SCSI Bus Controllers (SBC) and/or SCSI disk drives for the purpose of servicing customer (public) equipment.

In the portions of the source code made available to the Examiner, it is clear that the DFAST utility further included means for checking the pre-existing firmware in the target controller to determine whether an updated firmware version will be required for a subsequent download (see, for example, the call to the USERMAINTREQUEST function near the top of the page labeled D28).

As stated above, Applicant is in the best position to clarify the exact nature and extent of the public use or sale of the DFAST utility and to clarify whether specifically claimed features of the instant invention were not embodied in the DFAST utility.

Conclusion

22. This Office action has an attached requirement for information under 37 CFR 1.105. A complete reply to this Office action must include a complete reply to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

23. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. One or around October 28, 2004, Technology Center 2100 will be relocated to Alexandria, Virginia, and Examiner Kiss's telephone number will change to (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:15 am - 4:45 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552. On or around October 28, 2004, Technology Center 2100 will be relocated to Alexandria, Virginia, and Tuan Dam's phone number will change to (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EBK /EBK
September 7, 2004



**ANTONY NGUYEN-BA
PRIMARY EXAMINER**

APPENDIX I

Attached are selected pages of Coding indicating known engineering capability for showing:

- (i) software programmable selection means for choosing a single or dual two-dimensional array means —
- (ii) means for selecting the appropriate number of array means of said first and second two-dimensional buffer array means —

The implementation factors are shown in the attached pages D1, D2, D28, D29 and D30 in the attached excerpts of the DFAST program download in multiple chunks which was shown in documents with a 1994 copyright notice.

```

$S VERSION 90.032.001                                00000092
$S SET STACK LIMIT 100                               00010000
$S RESET LIST XREF                                00011000
$S SET VERSION 01.005.000                           00012000
$S SET OMIT                                         00013000
# PATCHFOR DOWNLOAD IN MULTIPLE CHUNKS           00013500010040006
$S PAGE                                              00014000
$S Class | Unisys                                00015000
$S      | This material is restricted and proprietary to the 00018000
$S      | Unisys Corporation and is not to be reproduced, shown, 00019000
$S      | or disclosed outside the Unisys Corporation. Customer 00020000
$S      | Services Engineering restricted and proprietary data 00021000
$S      | is furnished solely for use by Unisys personnel in 00022000
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$S      |                                                 00024000
$S      |                                                 00025000
$S      | This document is the property of and shall be returned 00026000
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$S Material | Copyright (C) 1994.                  00031000
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$S      |                                                 00035000
$S PAGE                                              00036000
$S PAGE                                              00037000
$S PAGE                                              00038000
$S PAGE                                              00039000
$S TARGET / F W L O A D                            00040000
$S Patch History                                     00041000
$S Patch History                                     00042000
$S Patch History                                     00043000
$S 4/94 Initial version. Will download A-code files to SBC controllers 00044000
$S and SCSI Disk Drives.                           00045000
$S 4/94 Changes - Qualification phase for official CSPO release 01.001. 0004700010010001
$S 5/94 Add 'Express Mode' for engineering (DISKS only) release 01.002. 00047200010020003
$S 6/94 Change location of some display statements. --- release 01.002. 00047500010020002
$S 10/94 Fixed seg array error in Verifyfile procedure. release 01.002. 00047600010020004
$S DOWNLOAD FIRMWARE to A-SERIES TARGETS (DFAST) 00052000
$S Utility's Part Number: 3492 4639                 00053000
$S Utility's primary function is to load microcode to SCSI BUS 00054000
$S CONTROLLERs (SBC) and/or SCSI disk drives, and must be marked as a 00055000
$S PPed (Privileged Program) in order to operate.       00056000
$S Interaction with the user is via prompts at either a terminal or 00057000
$S an ODT. Terminal prompts use regular I/O. ODT inputs use the 00058000
$S ACCEPT statement. Otherwise the input rules are the same. The 00059000
$S program requires interactive user participation to execute properly. 00060000
$S Load:                                             00061000
$S -----                                           00062000
$S To operate, two basic elements must be present: an SBC controller or 00063000
$S SCSI disk drive, and a microcode file on disk or tape. The microcode 00064000
$S must reside on a unit served by a different controller or disk than the 00065000
$S one being initialized. If a "critical unit" exists on the string served 00066000
$S by the controller being initialized and there is only one path to that 00067000
$S critical unit, the system will reject the attempt to download the 00068000
$S microcode.                                         00069000
$S 00070000
$S 00071000
$S 00072000
$S 00073000
$S 00074000
$S 00075000
$S 00076000
$S 00077000

```

D1

1) Step one is to determine the code file's capability by having the user enter a file name. Normal Family Substitution rules are in effect. If the file cannot be found, the user is prompted to enter another file name. The file name may include an "ON <family>" in the file declaration if it resides on disk (e.g., (UCODE)XYZ/123 ON MYPACK). If the file resides on tape, the file name only would be entered (e.g., SCZFRM).

If the code file is not a valid SBC or disk drive Acode file, the file is rejected and the user is prompted to enter another file name.

2) Step two is to determine the SBC controller or drive capability. The user enters a SBC or drive number and the utility reads the unit's attributes. If the SBC or drive number does not represent the correct target, or if the target attributes do not match those of the Acode file, the user is prompted to enter a new target number or 'Quit'. The SBC controller or drive must be reserved.

>>> There may be no way to prove that the SBC controller controls any given drive or that it is the only path to the drive or that another path exists! The User should do an "OL" on the ODT to verify the paths available for the target.

Verifyfile: 00102000010020003
----- 00103000010020003
00104000

Verify is simpler than Load since no SBC or drive is involved. The user answers the file name prompt and the Verify routine used by Load is called to generate a report on the attributes associated with that file.

```

Verify allows the user to cycle through multiple, potential A-code files until 'Quit' is entered.
$ POP OMIT
BEGIN
***** Structure Generating Declarations
$ DEFINE
    OVHD           = 12   #      At front of each code segment
    ,XSTATBYTES   = 254  #      Read Unit Status return length
    ,EIGHTK        = 8192 #
    ,ENDSGD        =
    ,SYSCAP        = 393216 #
    ,MAXELEMENTS   = 1   #      MAX ELEMENT PER DIMENSION
    ,MAXROWS       = 48   #      MAX NUMBER OF ROWS
;
FILE
    CODE( KIND      = TAPE,          # UNKNOWN TYPE
    $     LABELKIND   = UNLABELLED,   # READ ONLY
    FILEUSE        = IN,
    OPTIONAL       = TRUE,
    NEWFILE        = FALSE,
    DEPENDENTSPECS = TRUE)
    ,LINE( KIND      = PRINTER,
    FILEUSE        = OUT,
    FRAMESIZE      = 8,
    MAXRECSIZE    = 132)
    ,RMT( KIND      = REMOTE,
    FILEUSE        = IO,
    BLOCKSTRUCTURE = EXTERNAL,
    FRAMESIZE      = 8,
    MAXRECSIZE    = 132)
;
DIRECT EBCDIC ARRAY
    IMLBUF2      [0:0,0:0]      # To be resized
    ,IMLBUF3      [0:0,0:0]      # To be resized
    ,IMLBUF       [0:0]
;

00105000
00106000
00107000
00108000
00109000
00110000
00111000
00112000
00113000
00114000
00115000
00116000
00117000
00118000
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00129000
00130000
00131000
00132000
00133000
00134000
00135000
00136000
00137000
00138000
00139000
00140000
00141000
00142000010040006
0014220001.005.001
00142500010040006
00143000

```

D2

```

* Get attributes of Target
RSLT := USERMAINTREQUEST(CTLUNIT, INQUIRY, 23, 192, 0,
                         SHORTBUF, MRD, HDRESULT);
IF RSLT > 0 THEN
  BEGIN
    SHOW("MCP interface error " C
         RSLT FOR * DIGITS C
         " to get target" C
         " attributes for SCSI drive " C
         CTLUNIT FOR * DIGITS, TRUE);
    SHOWRSLT(RSLT, ATTRIBUTESV);
    SHOW("Check TARGET for problem", TRUE);
    IF NOT RELEASESETARGET (OPTODO) THEN
      GO GRANDKIT
    ELSE
      GO NEXTDRIVE;
  END;

SHOWINQUIRYDATA;

IF EXPRESSMODE THEN           * Save for display at end of download
  REPLACE OLDEWLEVEL [0] BY TSERVOREV_LVL FOR NEWFWLEVELNG;

* Get code file & match header rec. info against Target info.

* If TSERVOREV_LVL = FNEWFWLEVEL FOR NEWFWLEVELNG THEN
  BEGIN
    SHOW ("Serve FW levels of Target and File are the same.", TRUE);
    START "Do you still want to download the firmware? Enter YES or NO";
    PROMPT;
    IF PL NEQ "Y" THEN
      BEGIN
        SHOW ("Download will not take place for target " C
              CTLUNIT FOR * DIGITS, TRUE);
        IF NOT RELEASESETARGET (OPTODO) THEN
          GO GRANDKIT
        ELSE
          GO NEXTDRIVE;
      END
    ELSE REPLACE SAVEFWLVL [0] BY 48"00" FOR OLDEWLEVELNG;   * NO FORMAT
    END
  ELSE
    IF NOT COMSERVOFWLVL THEN * COMPARE FW LEVELS OF FILE VS. TARGET
      IF NOT RELEASESETARGET (OPTODO) THEN
        GO GRANDKIT
      ELSE
        GO NEXTDRIVE;

* If drive needs to be formatted after firmware download, get
* permission before downloading the code.
* Each FW level area in file = 8 bytes. If byte 0 neq 48"00", drive
* must be formatted after code is loaded.
* If SAVEFWLVL [0] NEQ 48"00" THEN * Drive needs formatting
  IF SAVEFWLVL [0] NEQ 48"00" THEN
    IF NOT OKTOFORMAT THEN
      IF NOT RELEASESETARGET (OPTODO) THEN
        GO GRANDKIT
      ELSE
        GO NEXTDRIVE;

* Request function

IF NOT EXPRESSMODE THEN
  SHOW("Starting to download code to drive " C
       CTLUNIT FOR * DIGITS, TRUE);

IF FCODEBYTES > SYSCAP THEN
  BEGIN
    NUMBROFIOS := FCODEBYTES DIV EIGHTK;
    NUMBROFIOS := " + 1;
    SHOW(" NUMBROFIOS = " C NUMBROFIOS FOR * DIGITS, TRUE);
  END;

```

DECISION
ON
SYSTEM
BYTES

D 28

```

SIZEOFLSTIO := FCODEBYTES MOD EIGHTK;
SHOW(" SIZEOFLSTIO = " C SIZEOFLSTIO FOR * DIGITS,TRUE);
FIRSTTIME := TRUE;
OFFSET := 0;
I := 0;
J := 0;
DO
BEGIN
  IF J <= 47 THEN
  BEGIN
    RSLT := USERMAINTREQUEST(CTLUNIT, DOWNLOADMODE7, 8192, OFFSET, 0,
      IMLBUF2[I,*], MRD, HDPRESULT);
    SHOW("I1 = " C I FOR * DIGITS,TRUE);
    SHOW("1OFFSET = " C OFFSET FOR * DIGITS,TRUE);
    IF RSLT > 0 THEN
      BEGIN
        SHOWRSLT(RSLT, LOADSLAVEIMLV);
        SHOWMRDBITS;
        SHOWHDPRESULT;
        SHOW("<< Microcode(1) NOT loaded!! >>",TRUE);
        IF NOT RELEASESETARGET (OPTODO) THEN
          GO GRANDKIT;
      END;
    END;
  ELSE
  BEGIN
    IF FIRSTTIME THEN
      I := 0;
    FIRSTTIME := FALSE;
    RSLT := USERMAINTREQUEST(CTLUNIT, DOWNLOADMODE7, 8192, OFFSET, 0,
      IMLBUF3[I,*], MRD, HDPRESULT);
    SHOW("2I = " C I FOR * DIGITS,TRUE);
    SHOW("2OFFSET = " C OFFSET FOR * DIGITS,TRUE);
    SHOW("2J = " C J FOR * DIGITS,TRUE);
    IF RSLT > 0 THEN
      BEGIN
        SHOWRSLT(RSLT, LOADSLAVEIMLV);
        SHOWMRDBITS;
        SHOWHDPRESULT;
        SHOW("<< Microcode(2) NOT loaded!! >>",TRUE);
        IF NOT RELEASESETARGET (OPTODO) THEN
          GO GRANDKIT;
      END;
    END;
  END;
  NUMBROFIOS := * - 1;
  OFFSET := * + EIGHTK;
  I := * + 1;
  J := * + 1;
END;
UNTIL NUMBROFIOS = 0;
SHOW(" NUMBROFIOS = " C NUMBROFIOS FOR * DIGITS,TRUE);
SHOW(" I = " C I FOR * DIGITS,TRUE);
SHOW(" J = " C J FOR * DIGITS,TRUE);
SHOW(" OFFSET = " C OFFSET FOR * DIGITS,TRUE);
IF J < 47 THEN
BEGIN
  RSLT := USERMAINTREQUEST(CTLUNIT, DOWNLOADMODE7, 8192, OFFSET, 0,
    IMLBUF2[I,*], MRD, HDPRESULT);
  SHOW("3I = " C I FOR * DIGITS,TRUE);
  SHOW("3OFFSET = " C OFFSET FOR * DIGITS,TRUE);
  IF RSLT > 0 THEN
    BEGIN
      SHOWRSLT(RSLT, LOADSLAVEIMLV);
      SHOWMRDBITS;
      SHOWHDPRESULT;
      SHOW("<< Microcode(3) NOT loaded!! >>",TRUE);
      IF NOT RELEASESETARGET (OPTODO) THEN
        GO GRANDKIT;
    END;

```

393216 Bytes

Choose 1st Two-Dimens
Array

Choose 2nd Two
Dimens. Array

D 29

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01506400010040006
0150640201.005.000
0150640401.005.000
01506410010040006
01506415010040006
0150641601.005.000
01506420010040006
01506430010040006
0150643501.005.000
0150643601.005.000
01506440010040006
0150645001.005.000
0150645201.005.000
0150645401.005.000
0150645601.005.000
0150645801.005.000
0150646001.005.000
0150646201.005.000
0150646401.005.000
0150646601.005.000
0150646801.005.000
0150647001.005.000
0150647201.005.000
0150647401.005.000
0150647601.005.000
0150647801.005.000
0150648001.005.000
0150648201.005.000
0150648401.005.000
0150648601.005.000
0150648801.005.000
0150649001.005.000
0150649201.005.000
0150649401.005.000
0150649601.005.000
0150649801.002.006
0150650001.002.006
0150650201.002.006
0150650401.002.006
0150650601.002.006
0150650801.002.006
0150651001.005.000
0150651201.002.006
0150651401.002.006
0150651601.002.006
0150651801.005.000
0150652001.002.006
0150652201.002.006
0150652401.002.006
0150652601.005.000
0150652801.002.006
0150653001.005.000
0150653201.005.000
0150653401.005.000
0150653601.005.000
0150653801.005.000
0150654001.005.000
0150654201.005.000
0150654401.005.000
0150655001.005.000
0150655201.005.000
0150655401.005.000
0150655601.005.000
0150655801.005.000
0150656001.005.000
0150656201.005.000
0150656401.005.000
0150656601.005.000
0150656801.005.000
0150657001.005.000
0150657201.005.000

```

```

        END;
    END
ELSE
BEGIN
  RSLT := USERMAINTREQUEST(CTLUNIT, DOWNLOADMODE7, 4224, OFFSET, 0,
                           IMLBUF3[I,*], MRD, HDRESULT);
  SHOW("4I = " C I FOR * DIGITS, TRUE);
  SHOW("4OFFSET = " C OFFSET FOR * DIGITS, TRUE);
  SHOW("4J = " C J FOR * DIGITS, TRUE);
  IF RSLT > 0 THEN
    BEGIN
      SHOWRSLT(RSLT, LOADSLAVEIMLV);
      SHOWMRDBITS;
      SHOWHDPRESULT;

      SHOW("<< Microcode(4) NOT loaded!! >>", TRUE);
      IF NOT RELEASESETARGET (OPTODO) THEN
        GO GRANDXIT;
    END;
  END;
END
ELSE
BEGIN
  RSLT := USERMAINTREQUEST(CTLUNIT, LOADSLAVEIMLV, FCODEBYTES, 0, 0,
                           IMLBUF, MRD, HDRESULT);
  SHOW("5I = " C I FOR * DIGITS, TRUE);
  SHOW("5OFFSET = " C OFFSET FOR * DIGITS, TRUE);
  IF RSLT > 0 THEN
    BEGIN
      SHOWRSLT(RSLT, LOADSLAVEIMLV);
      SHOWMRDBITS;
      SHOWHDPRESULT;

      SHOW("<< Microcode(5) NOT loaded!! >>", TRUE);
      IF NOT RELEASESETARGET (OPTODO) THEN
        GO GRANDXIT;
      ELSE
        GO NEXTDRIVE;
    END;
  END;

  IF EXPRESSMODE THEN
    SHOW("Download complete. Waiting 20 seconds for prom burn to " C
         CTLUNIT FOR * DIGITS, TRUE)
  ELSE
    SHOW("Download complete. Waiting 60 seconds for prom burn to " C
         CTLUNIT FOR * DIGITS, TRUE);
  SHOW("Do not power off or alter drive " C
       CTLUNIT FOR * DIGITS, TRUE);

  * The SCSI disk drive has now turned off its SCSI interface.
  * It won't come alive until after it has done the power up
  * confidence tests (approx. 60 seconds). The second ATTRIBUTES command
  * can then be issued to display the new firmware level. NOTE: If the
  * second ATTRIBUTES command is issued before the target sequences
  * (powers itself back up) the target will hang and the program will show
  * an error.

  IF NOT EXPRESSMODE THEN
    SHOW("00:10 - Waiting for prom burn to target " C
         CTLUNIT FOR * DIGITS, TRUE);
  TIMER := 0;

  IF NOT EXPRESSMODE THEN
    DO BEGIN
      WHEN(10);
      N := (TIMER:=+1)*10 + 10;           * Seconds
      IF NOT EXPRESSMODE THEN
        SHOWRSLT(RSLT, -N);
      END UNTIL N >= 1*60;              * Drop dead time
    IF EXPRESSMODE THEN
      WHEN (20);                         * WAIT 20 SECONDS ONLY

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0150657401.005.000
 0150657601.005.000
 0150657801.005.000
 0150658001.005.000
 0150658201.005.000
 0150658401.005.000
 0150658601.005.000
 0150658801.005.000
 0150659001.005.000
 0150660001.005.000
 0150662001.005.000
 0150664001.005.000
 0150666001.005.000
 0150668001.005.000
 0150670001.005.000
 0150672001.005.000
 0150674001.005.000
 0150676001.005.000
 0150678001.005.000
 0150680001.005.000
 0150682001.002.006
 0150684001.002.006
 01507000
 01508000010040006
 0150820001.005.000
 0150840001.005.000
 01509000
 01510000
 01511000
 01512000
 01513000
 01514000
 015150001.005.000
 01516000
 01517000
 01518000
 01519000
 01520000
 01521000
 01521200010020003
 01521400010020003
 01521600010020003
 01521800010020003
 01522000010020003
 01523000010020003
 01524000
 01525000
 01526000
 01527000
 01528000
 01529000
 01530000
 01531000
 01532000
 01533000
 01534000
 01534500010020003
 01535000010020003
 01536000010020003
 01537000
 01538000
 01538500010020003
 01539000
 01540000
 01541000
 01541500010020003
 01542000010020003
 01543000
 01543200010020003
 01543400010020003
 01543600010020003

